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ABSTRACT

To examine the characteristics and problems of training procedures for parents of handicapped children, the paper focuses on the rationale for parents as teachers, the effectiveness of different models of training procedures evident in early intervention programs, and the combination of factors (parents' motivation and needs, professional ability, and "preciousness" which affect the development of a symbiotic parent-professional partnership. Section I cites animal research on parent care, human infant-adult interaction studies, legal mandates, and economic considerations as supportive evidence for parents as intentional teachers of their handicapped children. Two approaches (center based and home based programs) are considered: and intervention programs falling under these two models are briefly described including the following: Culturally Disadvantaged Preschool Children Research Project: Milwaukee Project: Model Preschool Center--Down's Syndrome Program: Infant, Toddler, and Preschool Research and Intervention: Hester Adrian Research Centre: Parent Involvement Project: University of Tennessee Child Development Center: Early Intervention Learning Programs of Parent-Infant-Young Children (Torrens College): University of Macquarie Special Education Centre: Project PATH: Dawnstart: Frances Elliott Centre, Aukland: Mangere Early Intervention Project, Aukland: Portage Project: and New Zealand Visiting Therapy Service. Among conclusions drawn in the second section are that the behavioral approach provides parents with an effective, easily learned method for modifying a wide range of behaviors with their noncompliant or developmentally delayed children: and that the process of teaching parents involves instruction in child observation, ask analysis, training in operant techniques, and formative program evaluation. A final section discusses the parent-professional symbiotic partnership in terms of the parents' need for emotional support, the exchange of information, and the development of parental teaching strategies. A list of over 200 references concludes the document. (SB)

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PARENTS AS TEACHERS OF THEIR HANDICAPPED CHILDREN : A REVIEW

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The evolution of parent training programmes designed to optimise the parents' potential as teachers of their handicapped children has been a major, exciting area of research in the seventies.

Strategies for educating parents as teachers have evolved in two main phases. Early studies, reviewed by Berkowitz and Graziano (1972), were often limited to university clinic or hospital settings, were heavily reliant upon behaviour modification techniques and included "one highly motivated parent, a [single problem] behaviour and considerable professional involvement" (Heifetz, 1977, p.205). An increasing recognition that parents are both primary socialisation agents (Griffin and Hudson, 1978; Mitchell, 1980) and powerful reinforcers for the child, has led to the second phase, the evolution of parent training programmes with more comprehensive, ambitious objectives. Parents are being given greater responsibility to plan, teach and evaluate programmes; the home is now stressed as the primary site of intervention; instructional manuals are being disseminated and, finally, the importance of developing an empathetic, complementary parent-professional partnership is being recognised (Benassi and Benassi, 1973; Bissell, 1978; Bronfenbrenner, 1976, Cunningham, 1975; Heifetz, 1977; Losen and Diament, 1978; McConkey and Jeffree, 1975; Mitchell and Mitchell, 1977; Mittler, 1974; Revill and Blunden, 1979).

Such highly structured, parent-oriented training procedures are not without moral or methodological problems. Mitchell (1979), for example, has noted that parents may be unduly pressured to join an intervention project and then required to spend unreasonable amounts of time in direct teaching. Such moral pressure, often generated by professionals, clearly becomes counter-productive. An example of the methodological problems that can arise is when a parent who effectively uses operant techniques in the clinic, abandons these in the home (Buktenica et al 1973; Guerney, 1969). Such a change in parental teaching strategies weakens a clinic-home comparison of the child's performance on prescribed activities.

To examine the characteristics and problems of parent training procedures, this review will focus on the rationale for parents as teachers of their handicapped children, the effectiveness of different models of parent training procedures evident in early intervention programmes, and the combination of factors - parents' motivation and needs, professional ability and 'preciousness' - which affect the development of a symbiotic parent-professional partnership.

I. PARENTS AS TEACHERS: A RATIONALE

Supportive evidence for parents as intentional teachers of their handicapped children may be drawn from animal research on parent care, from human infant-adult interaction studies, from such legal mandates as America's PL 94-142 and from certain economic considerations.

Animal Studies

Research on the effects of parental caretaking provides species-specific data from which one may infer hypotheses concerning the type and timing of parental behaviours that may facilitate the human infant's development.

Extensive work with primates, birds and mammals has revealed wide variations in parental nurturing. Parents of certain primate species share their caretaking role. With birds and mammals, however, it is the *mother's* caretaking and teaching behaviours that are important for the offspring's normal development. In particular, it is the mother's ability to provide adequate physical contact with the young, and adequate feeding, grooming and play that affect the offspring's growth (de Chateau, 1977).

The research reviewed in this section will examine four aspects of parental care : maternal deprivation; early enrichment; paternal caretaking and parental teaching behaviours.

Maternal deprivation. Maternal deprivation studies among animals have shown that mother-infant separation reduces the

quality of maternal care and affects the infant's physiology, motor activity and performance on learning tasks (Dewsbury, 1978). The permanence of such adverse effects, however, depends upon the animal species, the length of the separation period and the offspring's age at separation (Scott and Fuller, 1965). Thus, in goats a one-hour postpartum separation was sufficient to alter the mother's caretaking ability with detrimental effects upon the kid (Herscher, Moore and Richmond, 1958). With infant pigtail monkeys, a four-day maternal separation produced temporary changes in heart beat and body temperature which persisted beyond the separation period (Reite et al, 1978). While Sprague-Dawley rat pups reacted to complete maternal isolation by increased motor activity (Randall and Campbell, 1976), infant tree shrews visited briefly by their mothers every other day showed no distress and developed normally (D'Souza and Martin, 1974). Maternal separation during the neonatal period or early infancy would, therefore, seem to produce the more adverse effects.

Tactile deprivation studies with rhesus monkeys have shown conclusively that tactile contact between mother and offspring, evident in clinging behaviour, forms the basis of the important mother-infant attachment bond. On maturity, infant monkeys deprived of tactile contact with their mothers, though reared with terry-towel surrogate mothers, were grossly deficient in social, reproductive and nurturing behaviours (Harlow, 1962, 1971; Harlow, Harlow and Suomi, 1971).

These deprivation studies among animals have indicated, firstly, that maternal presence and maternal handling are both essential and, secondly, that the type, quality and timing of the sensory stimulation provided by the mother are important, though complex variables.

Early enrichment. The obvious complement to work on infant deprivation is research on early enrichment effects. While this research has identified such beneficial effects as accelerated growth of offspring

(Denenberg and Karas, 1961; Levine and Otis, 1958), altered or increased brain cells (Greenough, 1975), and better adaptive reactions to stress (Levine and Mullins, 1966), a more pertinent finding is the proposal that the mother is the mediator of enrichment effects. Numerous studies have suggested that these effects are mediated indirectly through alterations in the mother's behaviour. Handling or other treatment of pups causes faster emissions of ultrasonic cries which increase maternal attention and licking, thereby altering the mother's behavioural patterns (Dewsbury, 1978; Priestnall, 1973 ; Lee and Williams, 1974). Alternatively, handling the mother rats also produced alterations in maternal behaviour which, in turn, affected the physiology and behaviour of the pups (Denenberg and Holloway, 1974). In both experimental conditions, the altered maternal behaviour is the crucial mechanism for facilitating development in the offspring. From these interactional effects, two general rules may be inferred: the mother-young relationship should be regarded as a system of dynamic, reciprocal interactions and, secondly, the offspring's development depends upon the synchrony or 'mutual responsiveness' between the mother and infant (Denenberg and Thoman, 1976).

Paternal caretaking. While most research has focused on the mother-young interaction, the important role of the father is evident in many studies of non-human primates.

From his review of paternal behaviour in non-human primates, Redican (1975) has reported that the most extensive male care is found in the monogamous family groups of the marmosets, gibbons and siamang apes. Male pygmy marmosets assist at births, premasticate food for neonates and carry their twin infants for long periods daily (Langford, 1963; Stellar, 1960). Similar patterns of frequent neonatal grooming, carrying and protection are found in male siamangs and gibbons, the latter developing strong attachments with maturing, female infants. The causes of such paternal behaviour may be related to the male's familiarity with the mother, the social grouping, the age and sex of the infant and the time of the delivery season (Mitchell, 1969).

Further research has indicated that male birds' parental care is more extensive than that of male mammals (Crook and

Goss-Custard, 1972). It is argued that the process of mammalian reproduction relegates the male to a minor role in the care of the young (Orians, 1969). Work with carnivores, however, has elicited complex patterns of paternal care among coyotes and jackals, while many rodents display nearly all the maternal behaviours except lactation (Dewsbury, 1978). Despite wide variations across groups, there is ample evidence that male caretaking behaviours facilitate the offspring's development.

Parental teaching behaviours. Parental tuition - the adapting or shaping of the offspring's behaviour in relation to the environment - is a major facet of parental caretaking (Rheingold, 1963). Evidence for parental 'teaching' or guidance of feeding, predatory behaviours, predatory avoidance and locomotor activities will be noted. Observations of the mother-young feeding interaction of Howler monkeys (Carpenter, 1934) and chacma baboons (Hall, 1961) has indicated that feeding patterns and dietary preferences are acquired by the offspring's habit of eating scraps deliberately dropped by the mother. Further eating habits acquired by imitation of the mother include the Norway rats' special method for opening molluscs and the British tits' ingenious milk bottle opening behaviours (Hinde and Fisher, 1952).

The cat family has provided much evidence for parental teaching of predatory behaviours. Thus, lion cubs receive intensive training in hunting and killing (Wells, 1934), while kittens gain experience in catching and eating prey through following their mother (Wilson and Weston, 1947). For hunted animals, predatory avoidance behaviours are learned through imitation and practice of maternal example. Wyoming moose will practice the avoidance behaviours of low calls, bristling and freezing posture, exemplified by their mothers (Altmann, 1963).

Early investigations suggest that certain primates, in teaching their infants to walk or climb, adopt a complex teaching strategy involving coaxing, physical aid, modelling and much encouragement.

Summary. In summarizing this 'animal research' section, four comments may be offered.

Firstly, the deprivation and enrichment studies have shown that certain variables, particularly the amount, quality and timing of maternal sensory stimulation, affect the development of various offspring behaviours. There is, in fact, a need for greater precision in determining which particular parental behaviour, for which age offspring and for how long, is optimally effective. The claim that general environmental stimulation during infancy is important is therefore not supported (Clarke and Clarke, 1976; Rutter, 1972).

Secondly, the research evidence in support of the mother animal as 'teacher' of her offspring has tended to stress the one-way effect of the parent upon the infant. In any effective dyadic teaching situation, however, there is a reciprocal, harmonious response sequence in which the behaviour of each participant adjusts to the other animal and is thereby modified.

Thirdly, the work on male primates has indicated that highly developed paternal tolerance and paternal protection facilitate the offspring's growth and increase family group cohesiveness.

Finally, while direct inference from animal research to humans may be naive and misleading (Clarke and Clarke, 1976), there is abundant evidence to suggest that the offspring's development is facilitated by appropriate parental caretaking and teaching.

Parent-Child Studies : Effects of Parental Caretaking Behaviours

To answer the question 'Why the parents as teachers of their children?' supportive evidence will focus on the important effects of parent caretaking behaviours and parental teaching strategies.

Parent caretaking behaviours. The importance of the parent, particularly the mother, as the principal caretaker and teacher (Holzman, 1974) as well as being the primary source of sensory stimulation and emotional satisfaction has been documented by many investigators including Bayley (1955), Levenstein (1970), Schaffer (1977) and White (1971, a,) . The specific character-

istics which consistently emerge as significant for a normal child's development include degree of sensory stimulation, the methods of parental control, parental affection, language style and parental teaching strategies.

Referring to sensory stimulation in general, Hunt (1961) has noted that the infant's early learning can be assisted or depressed by the mother's ability to provide frequent and different changes in stimulation, both in her own behaviour and in the physical environment (Lewis and Goldberg, 1969). Research using tactile or kinaesthetic stimulation with non-retarded or premature children has shown the positive indirect effects of stimulation on later behaviours and the importance of the neonatal period and early infancy for initiating desired behavioural changes (Barnard, 1975; de Chateau, 1977). While extra postpartum maternal handling of normal babies may generate exchange signals that foster mother-child synchrony (de Chateau, 1977), other research has indicated that maternal attentiveness increased five-month olds' exploratory behaviour (Rubenstein, 1967), the rocking of premature infants improved their sleep patterns and alertness when awake (Barnard, 1975) and the increased handling of premature infants had significant effects upon their gross and fine motor development at eight months of age (Solkoff et al., 1969). While Beckwith (1976) has suggested that handling premature babies may assist their development, Thoman (1974) and de Chateau have cautioned against the generalisation that all early stimulation is beneficial for the child's growth. These authors have stressed that infants have different stimulus needs, different tolerance levels for both sensitivity and responsiveness to stimuli and that they differ in their ability to express their physical or emotional state in overt behaviour.

An awareness of these factors and the effects of specific tactile stimulation might enable the mother of a handicapped child, for example, to attend to specific cues of the infant and to intervene with an appropriate form of stimulation. With reference to parental methods of control, the behaviourists, Gewirtz and Boyd, view the mother as the child's major, positive reinforcer. The child's learning, therefore, may be

conditioned or controlled by maternal behaviours. By using such reinforcers as mother's full smile or verbal response, infant crying was extinguished, visual patterns were discriminated (McKenzie and Day, 1971), and infant vocalisations were increased (Gewirtz and Boyd, 1976).

Alternatively, where parental control refers to the *father's* permissiveness or punitiveness, research indicates that a father's behaviour may influence his preschool child's cognitive functioning (Radin and Epstein, 1975, cited in Lamb, 1976). In addition, such paternal characteristics can strengthen the preschool boy's developing masculinity (Mussen and Rutherford, 1963) and the young daughter's femininity (Johnson, 1963).

The language style of the mother or primary caretaker has an immensely important effect upon the child's language and cognitive development. While earlier studies related maternal deprivation (Ainsworth, 1962; Yarrow, 1961, 1963) or socio-economic status (Bee et al., 1969; Olim, 1970) to the child's cognitive performance and language acquisition, more recent work with parent-child dyads has focused on the linguistic variables that affect the child's cognitive activities and language development.

The research of Hess and Shipman (1965) and Bee et al., (1969), for example, has shown that middle-class mothers use more adjectives, more abstract concepts, complex sentences and more positive feed-back to their young children than do lower-class mothers. Such variables of maternal speech, it was suggested, accounted for the differential patterns of performance evident in the two social classes of children. Wachs, Uzgiris and Hunt (1971) also investigated young children's cognitive functioning. Using a wide range of independent variables, these authors found that such parental strategies as vocalising, talking to the child, naming objects and playing games were positively correlated to infant vocal behaviour and problem solving skills. This study, with others (Yarrow et al., 1972), has indicated that the young child's cognitive development may be facilitated by the quality of parental linguistic input and by the attentive interaction of the parent and child with the inanimate environment.

Research on maternal linguistic parameters has indicated that mothers modify their complex adult speech when talking to their young children. Thus, maternal speech to young non-retarded children is grammatically simple, slow, repetitious, with increased intonation and with distinct pauses between sentences (Brown and Bellugi, 1964; Snow, 1972). From this modified speech a child acquires expressive language, it is suggested partly through imitation and partly through a reciprocal relationship that allows the infant to develop rules. The extreme nativists would, in fact, argue that the young child possesses an innate linguistic ability to generate the grammatical rules of his native language (Chomsky, 1965).

Recent comparisons of mothers' linguistic input to normal and retarded young children have yielded inconsistent results (Mitchell, 1976). Furthermore, Buium, Rynders and Turnure (1974) compared the maternal linguistic environment of normal and retarded two year olds and found that Down's Syndrome children were exposed to a higher number of utterances, a greater number of imperatives and incomplete sentences but a lower number of conjunctions and irregular verb forms than the non-retarded children. In contrast, O'Kelly-Collard (1978) matched Down's Syndrome and non-retarded children for mental rather than chronological age and found no significant difference in the maternal linguistic parameters presented to either group of children. It was therefore concluded that the later language deficit evident in Down's Syndrome children may not be due to the earlier effects of modified maternal speech. In comparison with slightly older Down's Syndrome and non-retarded children, Rondal (1977) discovered that when the mean length of utterances was the same, the maternal linguistic input to the children is similar. More recently, a study with Down's Syndrome infants has shown a positive correlation between the mother's directions and reference to objects and the child's increasing age (Gunn, Clark and Berry, 1980).

Two conclusions may be made from these studies. Analyses of maternal speech, while carefully identifying syntactic and semantic components, have not yet determined which maternal

linguistic parameters stimulate a retarded child's vocalisations. Secondly, the different rates of language acquisition evident in non-retarded and Down's Syndrome children must depend upon the interaction of the maternal linguistic input and many other variables. An alternative contributory factor may be the disorganized or asynchronous mother-child interaction that results from a mother's reaction to her retarded child's responses (Brazelton, Koslowski and Main, 1974; Field, 1978).

Finally, research on the effects of parent teaching strategies on children's cognitive functioning has changed its focus from a concern with parents' class status to an emphasis on the teaching and learning behaviours in a mother-child teaching sequence.

In a comparison of the teaching strategies used by middle and lower class mothers with their normal four year olds, Hess and Shipman (1965) found that the middle class mothers' teaching method was more effective. In this method, the mothers used more praise, more abstractions, focused the child's attention on the task, gave reasons with her instructions and thereby enabled the child to reflect, make decisions and complete the cognitive tasks more efficiently.

In a study with nine month to eighteen month old infants, Streissguth and Bee (1972) found that the maternal teaching behaviours of high school educated and college educated mothers differed significantly, the latter mothers giving more positive reinforcement, though less specific task instruction, to their infants. Thus, even in infancy the child's cognitive development may be affected by the mother's intuitive teaching strategy. Holzman (1974) found that mothers of widely different educational backgrounds taught their toddler sons at different cognitive levels. It may be inferred that the mother's teaching strategy is influenced by her educational background, her effective use of positive reinforcement and her ability to allow the child time to reflect.

Comparisons of the interaction of each parent with the child in a structured, instructional situation has yielded some interesting similarities and differences. With non-retarded girls,

four to six years old, Osofsky and O'Connell (1972) found that while fathers offered more physical help with the task, mothers were more talkative and encouraged their daughter's efforts. In play situations with infants, fathers talked less (Rebelsky and Hanks, 1971), indulged in more playful than holding or contact behaviours (Yogman et al., 1976) and played more games than did the mothers (Field, 1978b). In the same study, however, Field observed that mothers and primary caretaker fathers engaged in the same amount of talking, smiling and mimicry of infant facial actions. Further similarities between mother-child and father-child interactions with their seven to thirteen months old infants have been reported by Lamb (1976). This similarity of mother-child and father-child interaction in an informal teaching or play situation is also evident in research involving more explicit parental instructions with older children. Thus, in a parent-child teaching situation where Down's Syndrome children aged four and a half to six years of age were engaged in a block assembly task involving seriation, one of the authors found no difference in the communication modes of parents to their children (Mitchell, 1980).

Despite the possible effects of social class, child birth order (Parke and O'Leary, 1976) and sex-of-parent differences (Spelke et al., 1973) upon parent-child interaction, the similarity of parental communication and instructional patterns of dyadic teaching is an important facilitating variable in any early intervention programme requiring the training of parents as explicit teachers of their children.

More recently, an extensive review of the arguments and empirical findings of the father's role in infancy (Parke, 1979) provides greater insight into the parameters of the father-infant interaction.

From the previous work of Hess and Shipman (1965), it may be inferred that an effective maternal teaching strategy would include reasons, questions, extensive use of non-verbal cues and considerable positive reinforcement. Recent analyses of teaching styles have sought to identify which maternal responses and teaching behaviours may increase the

child's correct performance.

Filler and Bricker (1976) observed mothers and their moderately retarded preschool children while the mothers taught a match-to-sample picture board task. Inconsistent with Hess and Shipman (1965), these authors found that the "successful teaching" mother relied on simple verbal communication, short sentences and repetitive pre-response verbal directions. The best predictor of the children's correct task performance was the mothers' post-response positive reinforcement. In a second related study, Filler (1976) modified certain mothers' teaching behaviours in two ways: by increasing the mothers' use of positive verbal feedback, positive physical feedback and toys or by providing the mothers with additional training in the systematic manipulation of the teaching materials. This latter training in systematic presentation increased the children's correct responses.

Filler's research illustrates, firstly, the necessity of educating parents in teaching methods applicable to young retarded children and, secondly, the importance of identifying which components of a teaching sequence maximise a child's correct performance.

Where a teaching or therapy method is inappropriate or does not produce the behaviours anticipated by the mother, there may be a loss of affection between the mother and the child. For example, without exception, ten mothers of preschool cerebral palsied children who could not walk by the end of a thirty-month study suffered a loss of warmth for their child (Kogan, Tyler and Turner, 1974).

In brief, this section has attempted to make explicit the effects of certain parent caretaking behaviours. The research on early stimulation not only indicated the specific beneficial effects of maternal handling, rocking and attentive-

ness, but also cautioned that the amount and quality of such stimulation are the variables that affect a child's emotional development.

While parents may exert behavioural control through operant methods, the more permanent effects of parental warmth and affection on a child's developing sexuality and cognitive functioning were noted.

Thirdly, the important effect of the mother's over-simplified, repetitive, situation-specific speech on the child's language development has increasingly been recognised.

Finally, research has shown that many mothers are intuitive teachers of their children. These mothers modify their speech, adapt their teaching method to the child's cognitive level and use positive reinforcement effectively. Thus, parent caretaking practices, particularly as they foster language skills, thinking skills and behaviour control, play a vital role in facilitating their child's development.

Other Supportive Arguments for Parents as Teachers

Arguments proferred to justify the involvement of parents as deliberate teachers of their handicapped children stem from psychological, economic and legal considerations. Literature concerned with 'parents as teachers' is consistently prefaced by one or more of the following arguments.

Firstly, the parents during the child's first two years - the foundation period for motor, language and cognitive development - are, as previously noted, the primary socialization agents and the child's primary language models and principal teachers. At home, unlike in the therapeutic, possibly intensive, clinic session, opportunities arise naturally for the parent to engage in teaching activities with the handicapped child (Tjossem, 1976); learned behaviours, reinforced by the parents, are more easily maintained and generalised (Shearer and Shearer, 1976). In addition, the parents have the neces-

sary motivation and affection to facilitate their child's development (Attwood, 1978).

Secondly, with the rapid expansion of services for handicapped children, parents may abdicate their responsibilities to the seemingly exclusive skills of the professional. Parents should be made aware of the immense positive influence they exert on their handicapped child's progress and in consequence their responsibility to that child (Mitchell, 1979).

A third argument for involving parents as teachers arises from necessity. The shortage of professional educators of developmentally delayed children has led to the intervention by parents as therapists of their children's problems (Reisinger, Ora and Frangia, 1976; Sloop, 1975) and teachers of their handicapped or disadvantaged infants and young children (Levenstein, 1970; Shearer and Shearer, 1976). While these parental interventions were successful, Karlsruher (1974) has cautioned that the factors that contribute to a non-professional's effectiveness are not fully understood and further investigation is imperative.

A fourth brief argument is that it is fiscally desirable to keep a child at home with his parents rather than maintain him in an institution.

Two final reasons for parent participation as teachers of their handicapped children may be drawn from the British 'Warnock' committee's report and from the American Public Law 94-142, "the most far-reaching legislation for the handicapped ever enacted by Congress" (La Vor, 1977, p.248). The Warnock report, Special Educational Needs (1978), in its chapter on 'Parents as Partners', has stressed the need for giving parents prompt information and practical help and for regarding parents as equal partners in the education of their developmentally delayed children. The importance of dialogue and partnership is stressed, slightly differently, in PL 94-142, the Education for All Handicapped Children Act (1975). This law has directed that each handicapped child should be given an individualised written educational programme, the preparation of which must involve consultation with the child's parents or guardians. The principle of parent participation in their handicapped child's education is thus given force of law in the United States.

Summary

In brief, the rationale for educating parents as more effective teachers has drawn inferential support from animal research dealing with maternal deprivation and early enrichment and substantial vindication from human parent-child studies dealing with parental caretaking and teaching behaviours. In terms of cost effectiveness, available professional personnel and handicapped children's rights, the economic and legal arguments have lent further support for involving parents as active, trained teachers. In combination, such evidence has formed the philosophic basis of many parent-oriented intervention programmes.

II. PARENTS AS TEACHERS : INTERVENTION PROGRAMMES

Training parents as successful teachers, as Griffin and Hudson (1978) have noted, may be effected by several approaches : filial therapy (Ginsberg, 1976); client-centred approaches (Reisinger, Ora and Frangia, 1976); 'psychological insight' (Lillie, Trohanis and Goin, 1976) and behaviour modification (Gardner, 1976). The exponential growth of effective parent training projects using behavioural technology makes it obligatory to review these projects prior to a more detailed discussion of two types of intervention programme.

Parent Training In Behaviour Modification

Critical reviews of parents' use of behaviour modification, or applied behaviour analysis as it is increasingly being called, may be found in the research of Berkowitz and Graziano (1972), Griffin (1979), Johnson and Katz (1973), O'Dell (1974) and Tavormina (1974).

This section will focus specifically on four aspects of parental training: the variety of children's behaviour modified by parents, the methodological difficulties evident in training programmes, the instructional procedures used for training parents, and the books and manuals available to parents for teaching their children.

Children's behavioural disorders. Parents have effectively modified the deviant behaviours of many handicapped children, including an illiterate, autistic boy (Mathis, 1971), brain damaged children (Salzinger, Feldman and Portnoy, 1970), children with cerebral palsy or spina bifida (Shontz and Wright, 1968), young deaf children (Mira, 1972), emotionally disturbed children (Christopherson and Arnold, 1971), and Down's Syndrome children (Bidder, Bryant and Gray, 1975). Specific behaviours modified by parents have included temper tantrums (Shah, 1969; Williams, 1959), enuresis (Bucher, 1972), encopresis (Davis, Mitchell and Marks,1976), extreme aggressive behaviour (Johnson and Brown, 1969), negativism (Brown and Pace, 1969), destructive behaviour and echolalia (Bettison, 1974) and eye contact (McConnell, 1967, cited in Howlin et al., 1973).

Methodological difficulties. Analyses of these studies indicate that many behaviours of handicapped children can be modified by the parents' systematic teaching, careful observation and use of operant procedures. Research, however, stresses the need to effect the behavioural change in the natural environment, usually the home, in which the inappropriate behaviour occurred (Tharp and Wetzel, 1969; Tramontana, 1971). Criticism has been directed at the inadequate descriptions of programme content, the parent training procedures, the reinforcement schedules and the quality of the parents' reading assignments (Johnson and Katz, 1973). Additional criticisms have been related to the lack of adequate controls used during the intervention and to the evaluation of long-term retention of desired behaviours. These inadequacies have limited the usefulness of these studies for replication.

Recent behavioural research has shown an advance in methodological rigour and technical complexity (Griffin and Hudson, 1978) and an increasing concern with both generalisation of treatment effects across environmental settings and the long-term effectiveness of parent training programmes. The behavioural research of Patterson (1974), particularly, exemplifies the careful research design and degree of parental involvement necessary for effective intervention. His study on the modification of boys' conduct problems stresses such variables as home-school intervention treatments, parent training in a controlled learning situation and intensive data collection from therapists' observations and parents' daily reports. Patterson's concern that parent-child behaviours modified in the clinic should generalise to the home has been investigated by subsequent research (Forehand et al., 1979).

Further studies with non-compliant children have shown that different training programmes can modify parent behaviours and thereby reduce the child's non-compliance. Such programmes may be of three types: specific command instruction, a 'standard training programme of modelling, role play and learning operant techniques (Hanf and Kling, 1973) and, thirdly, a teaching sequence that involves discussing and practising a code system, role play,

and performance evaluation from video tapes (Peed, Roberts and Forehand, 1977). The resulting changes in both the parents' and child's behaviours can not only be maintained in the home for a one year follow-up period (Forehand et al., 1979) but the parents' modified behaviours can be generalised to the subject's compliant siblings.

With autistic children, certain training programmes were less effective in helping parents teach new 'child-target' behaviours (Koegel, Glahn and Nieminen, 1978). Watching a teaching demonstration or viewing a tape illustrating teaching procedures enabled parents of autistic children to teach specific behaviours only. A subsequent training programme, set at a higher cognitive level involving tuition in operant procedures, was more effective in teaching parents how to generalise their instructional skills. There is, however, little evidence that parents do apply their newly acquired teaching abilities to modify all of the child's inappropriate behaviours (Kelley, Embry and Baer, 1979). In their review of generalisation techniques in parent training projects, Wehman, Abramson and Norman (1977) have identified only two effective strategies for transferring a young autistic child's newly learned behaviours across environments: instructing a mother to use a 'bug-in-the-ear' cueing device to reinforce her child's social behaviour and, secondly, teaching parents how to use reversal procedures and operant techniques. These authors have made the important point that generalisation procedures for the 'untreated setting' should be carefully planned in advance; to support this premise several useful teaching guidelines are noted. These include consistency of reinforcement across environments, fading of positive reinforcement as behaviours are overlearned, and varying both the learning materials and the setting. The problem of generalising learned behaviours across settings, particularly for autistic and developmentally delayed subjects, is far from resolved. There is a need to consider which independent variables, teaching methods and reinforcement schedules will facilitate the retention of behaviour in the child's everyday environment.

Procedures for parent training. The grouping, venues and instructional techniques of behaviourally-oriented parent-training programmes have been critically reviewed (Berkowitz and Graziano, 1972; Gardner, 1976; Graziano, 1977; O'Dell, Flynn and Benlolo, 1977). With reference to grouping, parents have been trained in small groups (Glogower and Sloop, 1976; O'Dell et al., 1977; Peed et al., 1975), in combined group and individual settings (Patterson et al., 1972; Salzinger et al., 1970) and in individual consultation with the therapist (Arnold, Sturgis and Forehand, 1977; McDonald, 1977; Roberts, 1977).

Secondly, studies, with their concern for sophisticated technology and accurate records, have favoured the laboratory, clinic or workshop setting (Arnold et al., 1977; Casey, 1978; Lundeen, 1977; Patterson and Brodsky, 1966; Nay, 1975). Researchers' increasing awareness that "long-term gains are undoubtedly dependent upon changing the behaviour of key social agents in the [natural] environment" (Gardner, 1976, p.27) has led to parent training projects in the home(Gath, 1979; Johnson, Whitman and Barloon-Noble, 1978; Shearer and Shearer, 1976) and in home-school settings (Fredericks et al., 1971; Peed et al., 1975).

Commonly reported training techniques included didactic instruction, modelling by therapist, role play by parents and the use of various signalling systems (O'Dell et al., 1977; O'Dell et al., 1979; Nay, 1975; Peddicord, 1977; Seitz and Hoekenga, 1974). Comparisons of technique effectiveness have yielded conflicting results. Glogower and Sloop (1976) found that theoretical training in behaviour modification through lectures followed by programmed text and viewing tapes helped parents modify the tantrum, crying or noncompliant behaviour of their otherwise non-retarded school children. In contrast, O'Dell et al., (1977) found that pre-training in behavioural procedures did not assist parents of mentally retarded children to modify speech deficits, attention span, lack of toilet training and non-compliance. These results suggest that behavioural theory without practice is singularly ineffective with the more severe problems of handicapped children.

Investigations into media-assisted parent training have shown that the relative effectiveness of the manual, film or video-taped modelling is dependent to some extent upon the researcher's evaluation instruments. Six studies will be examined. By using a questionnaire to evaluate parents' knowledge of time out procedures, Nay (1975) found no significant difference in the effectiveness of four instructional methods. In a second assessment in which the parents' ability to apply time out procedures to specific problems was evaluated, this researcher found that the modelling with role play treatment was superior to the lecture and pamphlet instruction, but not to the modelling alone. In a second 'time out' study, the questionnaire showed role play to be the optimal instructional technique, while an evaluation of parental teaching in the home revealed that modelling instruction was more effective than lecture or written presentation (Flanagan, Adams and Forehand, 1979).

Further conflicting results are found in a third study where a film followed by a brief individual parent check out was found to be a superior teaching model than an experimenter-designed manual plus a film or individual parent training (O'Dell et al., 1979). With mothers of Down's Syndrome infants, both the duration of the experiment and the teaching procedures were found to be critical variables. These mothers benefitted not from a single instructional method, but from a comprehensive six month course on the theory and application of behavioural principles (Bidder, Bryant and Gray, 1975). This programme, by incorporating instruction in a wide range of cognitive and self-help skills, daily record keeping and subsequent programme modification, together with a 'problem-sharing' group discussion each session, indicated the importance of providing both information and emotional support for the mothers. In a programme with a severely retarded autistic girl, supportive counselling and positive reinforcement for the mother were as important as the verbal training in operant procedures (Bettison, 1974).

In contrast to the Bidder et al. study, parents of retarded children benefitted more from a brief practical pretraining in behavioural skills than from formal theoretical instruction, according to O'Dell, Flynn and Benlolo (1977). The subsequent workshop training, with its emphasis on task analysis, parental

recording, schedules of reinforcement and on instruction in modifying such behaviours as enuresis or nail biting, increased the parents' ability to apply these skills in the home.

Despite the varying results, these studies indicate that an effective parent training programme for short term management of non-compliance and for the carefully structured teaching required for handicapped children, would include therapist modelling, support counselling, active parent participation in role play and some evaluation or 'check-out' of the parents' ability to apply their newly learned teaching skills.

Books and manuals. Alternative approaches for training parents in operant procedures are found in the vast quantity of self-instructional books, programme packages and manuals. Among the many behaviourally-oriented books for helping parents and other educators teach handicapped children, three deserve particular mention: Becker's (1971) Parents are Teachers is informative and attractively presented; Hart's (1978) Beginning with the Handicapped provides a readable, practical guide for dealing with specific tasks and, Patterson and Gullion's (1971) Living with Children gives a detailed explanation of parent-child interaction and the operant mechanisms by which behaviours may be changed. Further useful books and programmed packages include those of Dickerson et al. (1973), Masden and Masden (1972), Ora (1971), Patterson (1971) and Roecker, (1973).

In addition to a behavioural approach, many manuals incorporate systematic teaching and use developmental milestones as teaching objectives: Koontz (1978), McCormack and Chalmers (1978), Miller (1975), Tilton, Liska and Bourland (Eds.) (1977), Watson (1973) and Williams and Jaffa (1971). Hanson's (1978) manual, with its detailed task analyses and precise recording techniques, is a useful though demanding guide for parents of Down's Syndrome infants. The handbook, Your Child is Different, a New Zealand publication, employs a more humanistic approach in providing parents with support, practical suggestions and teaching techniques (Mitchell et al., 1979).

Some validation of the instructional effectiveness of certain manuals has been obtained by Heifetz (1977). In this study, a manual alone used by parents was found to be as effective in helping retarded children to acquire self-help skills as a manual plus group training or a manual and home visits. These findings would appear to be in conflict with previously cited research that regarded pamphlet or written presentation as a less effective instructional technique. It may, however, be argued that a systematic, humanistic, attractively presented manual may encourage parents to persist with the continuous, carefully structured teaching that is essential for handicapped children.

Thus, behaviour modification, whether taught by a therapist, a video-tape, a programmed package or a manual, provides a parent with a fairly simple, easily learned, highly structured teaching procedure (O'Dell, 1974), particularly suitable for one-to-one teaching situations (Harris, 1978). These advantages are offset by the implied emphasis in behavioural procedures on training in skills rather than education and by the problems incurred in attempting to generalise and maintain a handicapped child's behaviour (Cunningham, 1975). A further criticism of behavioural procedures lies in the parent's ability, through interference with a child's responses or a dogmatic approach, to misapply this teaching technique.

Finally, O'Dell (1974) has offered a comment that is particularly relevant to the training of parents of handicapped children:

> It would be unwise to assume that parent training should be limited to behaviour modification skills. Research is needed to compare and integrate effective techniques from other areas regardless of their theoretical source. (p.430)

Parents As Teachers In Intervention Programmes

The amount of active teaching that parents undertake in early intervention programmes varies considerably. To facilitate comparisons, projects have been grouped according to site of parental teaching. To avoid the possible confusion implicit in such overlapping categories as 'home-based', 'home-centre based' and 'parent-organised centre-based' (Lillie, Trohanis and Goin, 1976), this discussion will focus simply on centre-based and home-based projects.

Centre-based intervention programmes. In a centre-based system the major teaching interactions between the therapist and parent occur at the centre (Lillie et al., 1976), usually the hospital, preschool or clinic. The variables of particular interest are the methods of parent training and the effectiveness of the parent-child teaching interactions.

Culturally Disadvantaged Preschool Children Research Project. Karnes' (1969) major objective in a two-year intervention project, was to minimise the possible retardation of disadvantaged children of preschool age by training the mothers of infants to become more skilful agents of intervention (Osofsky, 1979). The informal weekly group meeting provided the twenty mothers with instruction in such basic techniques as coping with inattention and using reinforcement and with 'a sequential education programme' (p.875). A third important facet of the programme was the two-fold use of group discussion, firstly to augment the mothers' knowledge of birth control and childbearing practices and, secondly, as a therapy, to increase the mothers' self confidence.

While the intervention was successful, a possible methodological weakness of the programme was the inability of the experimenter to determine which independent variables contributed to the significant outcomes of the project. It is difficult, therefore, to determine which variables might optimise the success of further intervention studies.

In contrast to Karnes' effective, informal, highly parent-oriented programme, more recent comprehensive programmes, while characterised by stringent assessment procedures, multi-disciplinary teams and complex technology, vary in their teaching methods and degree of parental involvement. Three such highly structured programmes will be discussed.

Milwaukee Project. The ambitious Milwaukee Project aimed to prevent mental retardation in infants where the mother had a Wechsler Adult Intelligence Scale IQ under 80 and a newborn infant (Heber and Garber, 1975). The teaching combined a vocational, home-management and childbearing course for the mothers with an intensive educational programme for the children three months of age to six years. While the child

received individual tuition for a year, in all developmental areas, the mothers did not receive any formal instruction in teaching their children. Data from mother-child interactions indicated that the programme did not improve the 'maternal functioning' where this included general interactional as well as teaching behaviours. The significant developments evident in the children were possibly the result of therapists' teaching rather than maternal instruction.

The following projects, while stressing the importance of parent involvement as teachers, have different educational philosophies and these are reflected in the content and instructional procedures of the parent teaching programmes.

Model Preschool Center: Down's Syndrome Program. The Model Preschool Center at the University of Washington, Seattle, provides an instructional programme for Down's Syndrome children from birth to approximately six years of age. Apart from the primary teaching function, the preschool acts as a demonstration-training course for students, para-professionals and for parents who acquire teaching skills to apply at home. For Hayden (1976), parent training begins with the professionals' awareness of the parents' need for emotional support and for objective information about the child's handicap and potential development. Such therapeutic, informative aspects of the professional's role are essential prerequisites for the development of parent-professional empathy and co-operation. The parents' education in teaching procedures combined instruction in behavioural technology with careful observation, data collection and subsequent programme modification. While these teaching parameters are characteristic of many projects, at Seattle each parent worked with a staff member and acquired a teaching technique suited to both her child's developmental needs and her own ability. To develop the parent's teaching technique demands a special skill of the staff member: the ability to reduce tension and thereby turn a parent's uneasiness into productive teaching (Hayden, 1976).

In the infant programme, the weekly instruction stressed environmental stimulation and increasing the child's attention span. From nineteen months to three years of age, the children partici-

pated in an intensive developmental programme which allowed some parent involvement in classroom teaching. A unique feature of this programme is Dmitriev's (1976) dual purpose 'Performance Inventory', primarily developed for on-going assessment, but used by teachers and parents as an invaluable guide for planning teaching sequences.

Encouraging results have indicated that the Model Preschool programme has enabled five to six year old Down's Syndrome children to perform 95% of the tasks expected of their normal peers (Hayden and Haring, 1977).

Undue optimism may be inappropriate for two reasons. A high performance score may reflect excellent, though highly specific, task teaching; the child's ability to generalise his skills is not assessed. Secondly, the extent to which the parents' home teaching contributes to these results is not clear, although it would be reasonable to suggest it plays an important role.

Infant, Toddler, and Preschool Research and Intervention Project. This multidisciplinary, comprehensive project has emphasized "early intervention parental involvement, developmental programming and the integration of normal and handicapped children in the same programme" (Bricker and Bricker, 1977, p.100). Of particular interest is the Brickers' multifaceted educational programme for the parents. This programme provides information on developmental areas and training in operant techniques. It also enables parents, through video-taped replay, to evaluate their teaching sessions and to co-ordinate the child's home-school educational activities. In addition, the parents are permitted different teaching experiences in the classroom. In the infant unit, the parent works directly with the child; in the toddler class, by contrast, the teacher trains the child in language and fine motor activities while, simultaneously, the parent receives instruction in teaching these skills. This programme, with its emphasis on parent education rather than parent training, indicates the current change in philosophies of early intervention.

The following college, university and hospital-based projects illustrate an interesting diversity in programme content

and in the instructional methods used to increase parents' teaching abilities.

Hester Adrian Research Centre. The Hester Adrian Research Centre's (University of Manchester) workshops for parents of developmentally delayed preschool children aimed to provide a "teaching model that would increase the ability of parents to structure everyday learning situations ... [and] to be more aware of their child's developmental needs" (Cunningham and Jeffree, 1974, p.7). The teaching method combined behaviour modification, developmental psychology and an understanding of learning behaviours of retarded children into a carefully structured workshop extending over several months. The most effective parent-teaching occurred in the small tutorial groups of project tutors and parents; the latter acquired such skills as careful observation, informal assessment, task analysis and the ability to modify an activity after feedback from the child. Of particular importance was the carefully organised timing of sessions; the tutorials were followed by experimental sessions in which the parents practised and succeeded with their handicapped children. In contrast to this careful organisation, the Croydon Workshop (Attwood, 1978), while also relying on tutorial groups, used a more casual approach in providing parents with emotional support, information and developmentally sequenced motor and language programmes.

Parent Involvement Project. Success with the 'H.A.R.C.' workshops led to the Parent Involvement Project (Jeffree, McConkey and Hewson, 1977). This project included parent-professional discussion of the children's learning tasks, careful task analysis, teaching schemes devised as games, evaluation of parents' teaching, and the dissemination of invaluable developmental charts and teaching materials in the books Let Me Speak (Jeffree and McConkey, 1976c) and Let Me Play (Jeffree, McConkey and Hewson, 1977).

University of Tennessee Child Development Center. This multidisciplinary, Down's Syndrome project (University of Tennessee Child Development Center) focused on early physical therapy for forty children, from birth to three years of age, and used the parents as therapists or 'primary programmers' (Connolly and

Russell, 1976). During the twenty-week clinic programme the parents received information on gross motor and other developmental areas, practical experience in assisting their children perform motor activities, assistance in planning their individualised home programmes and an opportunity for discussion of general problems. The home programme used vibrators and other equipment to reduce the child's hypotonia and strengthen the major groups of extensor muscles. Programme evaluation, using the Fishler et al. (1964) study as a control group, indicated that intensive physical stimulation during the child's first six months of life increased the rate of gross motor development. The effects of such stimulation upon cognitive and affective development, however, are not fully understood.

Early Intervention Learning Programs of Parent-Infant-Young Children (Torrens College). In contrast to physical therapy, Tein's (1977) intervention programme has stressed three principles: parents as co-educators, the training of parents as early in the child's life as possible and the integration of handicapped children into the ordinary preschool environment. Essential features of this programme include parent instruction by the project staff, the development of individualised learning activities for use at home, and close liaison between project and preschool.

University of Macquarie Special Education Centre. Macquarie University Special Education Centre has offered comprehensive objectives to a wide range of handicapped children, from early childhood to primary age (Ward, 1975). Apart from research in language acquisition, cognition, and effective teaching approaches, the Centre is concerned to disseminate its findings through teacher education, audio visual methods and a variety of agencies. In practice the Centre has several on-going research and teaching programmes, the latter maintaining a close liaison between centre, school and parent. In the five-day Early Childhood Education programme, for example, the teacher spends one-day per week at the preschool while one day is given to a parent-training scheme in which the teacher, parents and child work together at the centre. This co-ordinated centre-preschool intervention

strategy has produced significant improvements in the children's motor, social and language development.

Project PATH. Project PATH, (University of Waikato, New Zealand), an early intervention programme for Down's Syndrome children and their parents has two main objectives: to move the expressive and receptive language, cognitive functioning and perceptual-motor skills of Down's Syndrome infants closer to the developmental achievements of their normal peers and, secondly, to provide education and training for parents so that they may implement structured individualised teaching programmes with their handicapped children (Mitchell, 1980). For the nine families enrolled at the time of writing, the project offers certain well defined features. Firstly, the 'clinic' involves task analysis, modelling by therapist, parent-child practice sessions, instruction in operant techniques and feedback from the previous 'home-work assignment'.

For the therapist this latter feature provides a formative assessment of the task and alternative modes of teaching an activity. Secondly, the daily teaching of the infant is effected by the parent using the written tasks of the home-work assignment. Thirdly, formal assessment on the Bayley Scale is carried out every three months. Evaluations have indicated that the parental teaching at home and the clinic instruction have been effective in arresting anticipated developmental deterioration and in moving the children towards the "target" of 75 per cent of average development.

Dawnstart. Closely associated with Project PATH, in philosophy and research design, is DAWNSTART a centre-based intervention project (Straton, 1977). This project serves infants in special developmental needs whose ages range from zero to thirty months and combines parental instruction in the clinic with parent teaching in the home. An effective teaching strategy is the use of carefully designed developmental schedules that match sequenced task items with explicit teaching instructions. Feedback from the parents on the use of materials, the number of instructional steps and alternative methods of teaching a particular skill is a particularly valued component of this programme.

This Project began work in 1974 and has so far served upwards of 250 families. Data has been collected on 87 children attending in the Wellington area for periods exceeding 8 months and of these 87, 84 show significant improvements in developmental rate after intervention commenced, which was sustained for the duration of their involvement in the programme and after discharge. (E. Straton, personal communication).

Frances Elliott Centre, Auckland. The Macquarie programme, together with the University of Washington's Down's Syndrome project have been adapted for use at the Frances Elliott Preschool and Special Care Centre (Irwin, 1980). This centre, organised and funded mainly by parents, relies on group teaching to facilitate the development of the seven mostly Down's Syndrome children. Parents are involved in the choice of their child's educational tasks, in making equipment, and in teaching their child at home using the Macquarie programmes. With the varied tuition at home and at the centre the children are maintaining a minimum of 80% normal development. While progress is good with gross motor and fine motor skills, there is a general developmental lag with language. Irwin has made the important point that a careful analysis of the methods of teaching early language and of the adequacy of the Macquarie objectives is particularly urgent.

Mangere Early Intervention Project, Auckland. The Mangere Early Intervention Project, modelled on the behaviourally-oriented Portage Project, provides a highly structured training for parents of handicapped preschool children (Pook and Singh, 1978). Important features of this programme include individualised, carefully sequenced teaching programmes devised by a psychologist, written instructions for parents, data collection by parents and the continuity of intervention up to school age. Parental teaching includes the training officer's modelling of appropriate teaching skills and task activities, and instruction in behavioural principles using a prepared manual. An evaluation of part of the project showed that for four out of five mother-child pairs there was a positive change in interactions and an increase in both the effectiveness of the mother's commands and the number of successful teaching sessions (Howden Chapman, 1979).

Miscellaneous centre-based projects. Finally, of the many alternative venues for intervention and parent training, a further seven may be noted: The San Francisco State College centre where parents of preschool multiply-handicapped post-rubella children acted as classroom assistants in teaching motor and self help skills (Jackson, Evenson, and Elzey, 1971); an informal nursery school setting where mothers of preschool deaf children acquired language stimulation skills through supervised teaching of their youngsters (Luterman, 1971); the Max Plank Psychiatric Institute where parents of autistic, epileptic or cerebral palsied children received an intensive course in teaching the small sequential steps involved in language production or in self feeding (Kane et al., 1976); a paediatric practice where media-assisted instruction was used to help parents manage their preschool children's disruptive behaviours (Jackson and Terdal, 1978); a hospital-based language project for Down's Syndrome infants, where the parents learned to modify their infants' utterances through therapist demonstration and constructive criticism (Ford, 1978) and a centre based project where parents of Down's Syndrome infants received training in basic teaching skills (Clunies-Ross, 1979).

In contrast to the abundance of centre-based programmes, there is a surprising dearth of home-based projects where the parental training is effected in the home.

Home-based programmes. Arguments marshalled to support home-based intervention include parents' travelling problems, parents' dislike of group therapy, parents' apprehension of a university clinic (Sandow and Clarke, 1978) and difficulties in generalising child behaviours across settings. Previously cited research has stressed the home as the optimal intervention site and the parents or caregivers as the child's principal teachers.

Portage Project. The Portage Project, a well known home-based programme served over a hundred handicapped children in rural Wisconsin (Shearer and Shearer, 1972). Important programme features include parent teaching in the home, developmental checklists, activity charts, careful data collection and individualised programmes based on the home visitor's weekly assessment. While

this highly-structured approach may have advantages for a visiting therapist, the didactic teaching method may limit the parents' potential for designing their child's instructional programme (Gath, 1979).

Despite criticism, the Portage Project has been adapted as the Portage Guide and used by professionals as home visitors in helping severely handicapped British children (Revill and Blunden, 1979; Smith, Kushlick and Glossop, 1977).

Further small-scale home intervention projects, characterised by visiting therapists and parental teaching, have facilitated a variety of behaviours with young children and infants. Home teaching by parents, for example, has enabled a preschool child to focus attention (Santostefano and Stayton, 1967), enabled a mute five-year old to increase his speech (Howlin et al., 1973), accelerated the development of Down's Syndrome infants (Brinkworth, 1976; Hanson and Schwarz, 1978) and provided a programme of developmental work for young cerebral palsied children (Rayner, 1978).

New Zealand Visiting Therapy Service. This home-treatment and counselling service for parents of mainly brain-damaged children aged 0 to 5 years (Barnett, 1980) has three interesting features: Firstly, the therapists must be well qualified in physical and occupational therapies and capable of establishing empathetic relationships with parents and children; "the person ... is important, rather than the technique" (Barnett, 1980 p.3). Secondly, the therapist is concerned to assist the whole family in the correct handling of a cerebral palsied or developmentally young child. Thirdly, the therapist has a three-part role as teacher and counsellor of the parents, and liaison officer between the family and other professional and community organisations.

While no formal evaluation of the service is available at present, this service does provide an extremely valuable extension of paediatric assistance.

Conclusion

This section has focused on two major areas: parental training in behaviour modification and parent involvement in

centre-based and home-based intervention programmes. Three conclusions may be offered.

Firstly, despite problems with long term maintenance of desired behaviours and generalisation across settings, the behavioural approach provides parents with an effective, easily learned method for modifying a wide range of behaviours with their non-compliant or developmentally delayed children. Comparisons of instructional procedures have indicated that a successful parent training programme includes therapist modelling of behavioural techniques, role play, parent teaching sessions and informal assessment of the parents' teaching effectiveness.

Secondly, the parents' need for immediate information is partly met by the many developmentally sequenced self instructional books and manuals now available. While behaviourally oriented for the most part, these manuals tend to avoid an overuse of technical jargon.

Thirdly, in both large and small scale intervention programmes, the process of teaching parents involves instruction in child observation, task analysis, training in operant techniques and formative programme evaluation. Increasingly, however, parents are being taught educational principles in addition to basic teaching skills and are being consulted in the choice of educational tasks.

In both centre-based and home-based programmes there are developmental gains regardless of the child's age of entry. It may be suggested that the effect of parental teaching is most powerful during the child's first two years of life.

Finally, a cautionary note. Insufficient attention has been paid to the possibility that intervention programmes may have detrimental effects upon the parent, upon the parents' relationship with one another and upon the normal siblings. In addition, there is a possibility that intensive stimulation may, in some circumstances, have harmful effects upon developmentally delayed infants.

Despite these reservations and the problems of interpretation and generalisation inherent in short-term small scale projects, there is sufficient known about intervention for research to proceed optimistically, though cautiously.

III. PARENT - PROFESSIONAL PARTNERSHIP

An egalitarian symbiotic partnership, where parent and professional each contribute expertise and yet learn from the other, is a cornerstone of parent-oriented intervention. Three components of this partnership, the parents' need for emotional support, the exchange of information (Lillie, Trohanis and Goin, 1976) and the development of parental teaching strategies, will be discussed in this section.

Provision of Emotional Support

The rationale for providing emotional support has developed from parents' reactions to the birth and early development of their handicapped child. These parental reactions have been well documented (Berger and Foster, 1976; Burden, 1978; Chinn, Winn and Walters, 1978; Hallinan, 1978; Murray, 1959; Roos, 1977; Turnbull, 1978; Webb-Hendy, 1980). Parental responses may include guilt, grief, denial, anger, lowering of self-esteem and excessive self-sacrifice, while further emotional problems may accompany the resolution of religious difficulties or the decision to institutionalise a handicapped child.

Parental reaction to mental retardation has been perceived as a five-stage progression from 'awareness' and 'recognition' of their child's developmental delay, through stages of searching for causes and cures, to a final acceptance of the handicap (Rosen, 1955). A more recent analysis has focused on the parents' changing reactions to their Down's Syndrome infant (Cunningham and Sloper, 1977). Feelings of shock and isolation are followed by an increasing acceptance of the infant as the child's personality becomes more apparent. The next phase, when the child aged three to twelve months, may show little mental or motor retardation, is one of overcompensation and unrealistic notions of the child's potential. When developmental delay becomes increasingly evident the parents enter a complex series of phases of depression, realistic appraisal and increased motivation to help their child. Such research provides an important insight into the type and timing of parental emotions and should prepare the professional to meet the parents' changing emotional needs.

Several sources of emotional support are available for parents of handicapped children. According to Schlesinger and Meadow (1976, p.38), sensitive, non-judgemental listening is "the most helpful of all supportive roles". A skilled sympathetic listener can enable parents to share their emotional problems, discuss their attitudes and expectations for the child and increase their confidence as teachers of their handicapped child (Lillie, 1975). (A pertinent warning, however, is given by Bissell (1978): while a professional is concerned with adverse parental feelings, he must also be aware of his perception of the parent. A parent who is regarded with antipathy, patronage or as an object of pity is obviously not considered as an equal partner.) Emotional support may also be derived from the immediate family, particularly the spouse, the medical profession and service organisations (Hallinan, 1978), regular parents' meetings using group therapy techniques (Stokes, 1976), and parents of older handicapped children who may provide both encouragement and invaluable information on the child's potential development (Gayton, 1975). Where appropriate, it is the professional's responsibility to put parents quickly in contact with these additional avenues of support.

While the provision of effective emotional support is crucial to the developing parent-professional relationship, an overconcern with parental feelings may simply reflect the professional's incompetence in coping with parents' practical problems (Menolascino, 1968, cited in Heifetz, 1977). Such incompetence may result from ignorance that leads to incorrect diagnosis and faulty information to parents; from professional 'omnipotence' that relegates the parent, experienced in handling a disabled child, to an inferior, passive role (Roos, 1977); from inadequate explanation of the child's problem or from interprofessional arguments (Straton, 1980); and from the ineptitude of certain professionals to communicate the initial "unpleasant" diagnosis with honesty, sensitivity, in 'layman's language' and at an appropriate time (Webb-Hendy, 1980). Finally, therapists who label parents as 'unco-operative' may inadvertently reinforce the parents' negative attitudes and lack of motivation (Bissell, 1978). These examples show that various professional ineptitudes can increase parental distress and

frustration. More recently, professional self-criticism of such incompetence has led to a reappraisal of the optimum variables in the parent-professional interaction and a subsequent emphasis on such factors as empathy and open-communication that may facilitate a supportive relationship (Webb-Hendy, 1980).

Exchange of Information

Research concerned with the development of the parent-professional partnership has focused on variables that facilitate 'two-way' information-exchange.

One approach stresses the expertise of the professional and perceives the parent as a client, placing emphasis on programme content derived from parents' perceived needs, and emphasizing clear communication based on carefully structured information output (Jelinek and Kasper, 1976). In referring to information, these authors make two important points: firstly, the information should be relevant to the parents' needs and, secondly, the assessme t of the parents' needs should be seen as a continuous process. Clear communication between parent and professional, it is argued, is facilitated by a carefully designed intervention programme. In the initial parent interview, parents should receive information on the philosophy, objectives and teaching-learning activities of the programme. Subsequent sessions should include information on normal developmental patterns, the effects of the handicap, teaching techniques, practice in using audio-visual materials, evaluation procedures and on social services. Other writers include the provision of information on parents' legal and financial rights (Stokes, 1976), on transport services, on home aid services and parent relief (Webb-Hendy, 1980), and on the range of medical and treatment services (Gallagher and Gallagher, 1978).

A second approach to optimal exchange stresses the parents' contribution, the "unique knowledge of and skills in managing their handicapped child" (Mitchell, 1980, p.3). Such information saves time and facilitates the professional's choice of teaching objectives.

In a third, essentially pragmatic, approach to exchanging information, the professionals are advised to respect the parents' contribution, to 'admit not knowing' and to explain clearly 'without jargon' (Bissell, 1978). Accuracy in transmitting spoken and written information is stressed as a key component of effective communication. Professionals are warned that hurries telephone conversations with clients, illegibly written messages (Chinn, Winn and Walters, 1978) or complicated teaching instructions, by causing ambiguity, can provoke parental frustration. In contrast, the professional's regularly written report using simple language provides "realistic feedback that cannot be misconstrued ... as can the spoken word" (Straton, 1980, p.30). Parents, on their part, are recommended to provide relevant information (Jeffree, McConkey and Hewson, 1977) and to ask specific questions in interviews.

This sample of research has emphasized the importance of accuracy in promoting effective information exchange and the need for rapport between parents and professionals as essential pre-requisites of teaching and learning.

Developing Parental Teaching Strategies

The development or improvement of parental teaching techniques is dependent upon the philosophy of the programme and, in consequence, the professional's method of teaching parents.

Professional's educational philosophy. Parent-oriented programmes differ considerably in their approach to content and teaching method. Some professionals adopt a largely behaviourist position (e.g. Miller, 1975). The limitations of this approach, with its emphasis on instrumental training, has been succinctly reviewed by Cunningham (1975). A second approach adopted by professionals revolves around what may be termed the 'Piagetian position' (Bricker and Bricker, 1976). In brief, this position assumes that later cognitive, linguistic and fine-motor skills are developed from early sensorimotor experiences involving the child's exploratory and imitative interaction with his environment. While Piaget's theory of development may provide a broad philosophical and instructional framework, current research suggests that the

timing and sequencing of his six sensorimotor substages may require revision. For example, work on object permanence (Bower, 1972) and research on motor imitation (Moore and Meltzoff, 1978), where 12-21 day-old infants successfully mimicked adults' facial gestures indicate that normal infants may acquire certain cognitive and imitative skills earlier than Piaget supposed. Further, contradictory findings on the role of imitation in early language development suggest that the Piagetian view of imitation as a continuous, general learning strategem cannot be fully supported. Research indicates that imitation is used frequently by some children but not by others, that imitation is useful for acquiring certain words but not others and, finally, that imitation is more prevalent at certain language stages (Bates et al, 1979). Cognizance of such research is important for the professional in designing individualised programmes based on Piagetian views.

A third approach, by combining the Piagetian position with Erikson's theory of social-emotional development, has placed a dual emphasis on infant cognition and the important caregiver-infant attachment bond (Honig, 1977). Increasingly, 'infant curricula' stress the development of synchronous turn-taking between caregiver and child.

Finally, a concern for scientific precision may be reflected in an approach that combines developmental psychology, Piagetian cognitive theory and applied behavioural analysis (Mitchell, 1980). This approach, evident in programmes which stress developmental stages, data collection and task analysis, favours a precise, structured teaching method. The successful implementation of this approach, however, as with any innovative project, is dependent upon the professional's understanding, commitment and ability to interpret the programme's philosophy.

Professional's methods of teaching. Improving a parent's teaching technique depends upon the professional's teaching style, the provision of in-clinic practical teaching sessions for parents (Northcott and Fowler, 1976), the use of audio-visual teaching aids (see section II), and an emphasis on

task analysis and 'planned success' (Cunningham, 1975).

The professional as teacher, rather than the programme content, is a crucial variable for effecting change in parental behaviour (Barnett, 1980). Such teaching variables as 'warmth', ability to control children (Stedman, 1977), ability to explain and model activities effectively, ability to adapt the programme to suit the child (Mittler, 1976) and a natural informal approach with parent and child (Simmons-Martin, 1976) enable a parent to acquire teaching skills in a supportive relationship. Schachter (1979) has cautioned professionals against an over-emphasis on a didactic teaching style which minimises creative input from the parent or child and regards development as the acquisition of specific, possibly unrelated skills.

Successful teaching requires careful, detailed planning of activities. Initially and most importantly, parents should be enabled to understand the basic aims and teaching procedures of the programme (Mittler, 1976). Such knowledge may enable parents to teach more effectively in the home. To further increase the parents' success as teachers, parents should be encouraged to select and organise developmentally appropriate learning tasks for their child (Northcott and Fowler, 1976), suggest teaching methods (Mitchell, 1977), allow the child to initiate activities, evaluate their child's progress by careful observation and assess their child's learning by simple testing (Mitchell and Mitchell, 1977), and learn how, by modifying the antecedents or consequences of a teaching sequence, the desired behaviours may be attained. While parents, particularly in intervention programmes, readily acquire teaching skills, their overall teaching styles may differ from a parent-directed didactic approach to child-centred learning where the mother allows the child to decide the pace of teaching. The differences in teaching styles would appear to be related to parent and child personality variables and the developmental age of the child.

Summary

This section has focused on three components that may facilitate the developing parent-professional partnership. Firstly, to provide effective emotional support for parents, the professional

must be both sensitive and practical - sensitive to the possible variety of parental emotional reactions and practical in organising additional support within the family and from community organisations.

Secondly, the importance of empathetic, two-way communication cannot be overemphasized. Clarity of expression, relevance of information and acceptance of the parents' knowledge of their child are crucial factors in developing the effective information exchange necessary between parents and professionals.

Finally, the development or improvement of parent teaching strategies is reliant upon a diversity of factors: a combination of interactionist Piagetian philosophy with the behaviourist approach; an emphasis on the professional's teaching expertise, enthusiasm, awareness of non-verbal communication and ability to maintain rapport with parents; the development of synchronous parent-infant interactions; and the parents' active involvement in the choice of teaching task and teaching method and in the formative evaluation and possible modification of the programme.

IV CONCLUSION

The current and increasing emphasis upon parents becoming actively involved in the education of their handicapped children reflects a recognition of many factors. It has been argued that parents have unique opportunities to influence the development of their children, that they are generally motivated to seek and respond to professional guidance, and that they have the right to be perceived as an integral part of special education delivery systems. It has been argued, too, that educational programmes can be so designed as to take into account the range of individual differences in physical and psychological resources that parents bring to the task of teaching their handicapped children. Parent involvement as teachers, then, may be seen as psychologically sound, as educationally feasible and, provided parents' rights to opt for or to decline participation are respected, as socially mandatory.

Acceptance of this view of the role of parents carries with it the corollary that professionals may have to redefine their roles and to critically evaluate their competence to perform them. Clearly, they will have to possess a repertoire of social and pedagogic skills in working closely with parents - skills that may not be easily extrapolated from working with children. The notion of professionals working in close partnership with parents, therefore, has wide implications for training in the helping professions. At an even broader level, the more towards greater parental participation in the education of their handicapped children will have political ramifications as parents seek a greater voice, not only with respect to their individual child's education, but also with respect to seeking to achieve expression to their views in legislative and other policy-formation mechanisms. The principle of parents as teachers of the handicapped, then, has the potential to revolutionise special education.

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